

IN THE CLAIMS

Please cancel claims 1-12 and add new claims 13-32.

13. In an injector for a common rail injection system for internal combustion engines, having a valve control chamber (11), defined by the end face (33) of a nozzle needle (21), in which the fuel inlet to the control chamber takes place via an inlet throttle (9) and the fuel outlet takes place via an outflow throttle (13), and there is a closing piston (34) in the valve control chamber (11), the improvement wherein the closing piston (34) has a larger diameter than the nozzle needle (21).

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14. The injector of claim 13, wherein the closing piston (34) is disposed between the inlet throttle (9) and outflow throttle (13) on one side and the nozzle needle (21) on the other.

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15. The injector of claim 13, wherein the closing piston (34) has a first bore (35), extending between its end faces (45, 47).

16. The injector of claim 13, wherein the closing piston (34) has a throttle bore (36) extending between its end faces (45, 47).

17. The injector of claim 13, wherein that a stroke stop (37) is provided in the valve control chamber (11) and limits the displaceability of the closing piston (34) in the direction of the inlet throttle (9) and the outflow throttle (13).

18. The injector of claim 13, wherein a closing spring (40) is present, which is braced against the closing piston (34) and the nozzle needle (21).

19. The injector of claim 18, wherein that the closing spring (40) is disposed in the valve control chamber (11).

20. The injector of claim 18, wherein the closing spring (40) is braced against the end face (33) of the nozzle needle (21).

21. The injector of claim 13, wherein the nozzle needle (21) has a pin (38) protruding in the direction of its longitudinal axis and past its end face (33).

22. The injector of claim 21, wherein the first bore (35) of the closing piston (34) is closable by the pin (38).

23. The injector of claim 22, wherein the first bore (35) of the closing piston (34) has a sealing seat (39) on the face end toward the nozzle needle (21), and the pin (38) has a corresponding sealing cone.

24. The injector of claim 13, wherein the inlet throttle (9) and/or the outflow throttle (13) is disposed in a housing (29) of the injector.

25. The injector of claim 14, wherein the closing piston (34) has a throttle bore (36) extending between its end faces (45, 47).

26. The injector of claim 15, wherein the closing piston (34) has a throttle bore (36) extending between its end faces (45, 47).

27. The injector of claim 13, wherein that a stroke stop (37) is provided in the valve control chamber (11) and limits the displaceability of the closing piston (34) in the direction of the inlet throttle (9) and the outflow throttle (13).

28. The injector of claim 14, wherein a closing spring (40) is present, which is braced against the closing piston (34) and the nozzle needle (21).

29. The invention defined in claim 28, wherein said closing piston (34) has a first bore (35) and a throttle bore (36) extending between its end faces (45, 47).

30. The injector of claim 29, wherein that the closing spring (40) is disposed in the valve control chamber (11).

31. The injector of claim 19, wherein the closing spring (40) is braced against the end face (33) of the nozzle needle (21).

32. The injector of claim 14, wherein the nozzle needle (21) has a pin (38) protruding in the direction of its longitudinal axis and past its end face (33).